REMARKS

Claim 1 has been amended to recite "a rechargeable cathode for an aqueous electrochemical cell." Support for this amendment can be found in the specification, e.g., at page 9, lines 11-14. Claims 1–43 are pending in the application. Claims 1–41 were rejected on various grounds, each of which is discussed below.

Rejection Under 35 U.S.C. § 112

Claim 15 was rejected under 35 U.S.C. 112, second paragraph, as indefinite. According to page 2, paragraph 1 of the Office Action, "The term 'racetrack battery' is not clearly disclosed."

Applicants traverse this rejection. The term "racetrack battery" is clearly defined in the specification, at page 16, lines 26–31. In view of this explanation, applicants request that the rejection under 35 U.S.C. 112 be withdrawn.

Rejections Under 35 U.S.C. § 102

Claims 1 and 7–14 were rejected under 35 U.S.C. 102(b) as being anticipated by Terao et al. (USPN 5,458,993). Applicants traverse this rejection.

Claim 1 is directed to a rechargeable cathode. Claims 7–14 depend, directly or indirectly, from claim 1, and therefore contain this limitation as well.

Terao et al. discloses a primary battery, i.e., a battery that is not rechargeable. Therefore, claims 1 and 7–14 are not anticipated by Terao et al., and the rejection under section 102(b) should be withdrawn.

Claims 1–5 were rejected under 35 U.S.C. 102(b) as anticipated by Kohlhase et al. (DE 3242139 A1). Applicants traverse this rejection.

Claim 1, as amended, is directed to a rechargeable cathode for an aqueous electrochemical cell. Claims 2–5 depend from claim 1, and therefore contain these limitations as well.

Kohlhase et al. discloses a cathode paste to be used in nonaqueous electrochemical cells. Therefore, claims 1–5 are not anticipated by Kohlhase et al., and the rejection under section 102(b) should be withdrawn.

Claims 15–17, 19–23, 26–29, 31 and 33 were rejected under 35 U.S.C. 102(b) as anticipated by Kordesch et al. (USPN 3,945,847). Applicants traverse this rejection.

Claim 15 is directed to an air recovery battery having a container with an air access port. Claims 16–17, 19–23, 26–29, 31 and 33 depend, directly or indirectly, from claim 15, and therefore contain this limitation as well.

Kordesch et al. discloses a cylindrical cell with a cylindrical steel can container, within which are a rolled manganese dioxide cathode, a zinc foil anode, and separators. The steel can container in the Kordesch et al. cylindrical cell does not have an air access port. Therefore, claims 15–17, 19–23, 26–29, 31 and 33 are not anticipated by Kordesch et al., and the rejection under 102(b) should be withdrawn.

Claim 39 was rejected under 35 U.S.C. 102(e) as anticipated by Debe et al. (USPN 6,183,668 B1). Applicants traverse this rejection.

Claim 39 is directed to a method for making a rechargeable cathode by combining a catalyst, carbon particles, and a solvent to form a mixture, combining the mixture with a hydrophobic polymer below about 10°C to form a paste, stirring the paste below about 10°C, and then warming the paste to at least about 20°C, at which point the paste is mixed.

Debe et al. teaches that initial mixing takes place at a temperature in the range of about 0°C to about 100°C, and preferably in the range of about 20°C to about 60°C. In other words, Debe et al. does not specifically disclose mixing at a temperature below about 10°C. Additionally, Debe et al. teaches warming the mixture to about 150°C. Therefore, claim 39 is not anticipated by Debe et al., and the rejection under 35 U.S.C. 102(e) should be withdrawn.

Rejections Under 35 U.S.C. 103(a)

Claim 6 was rejected under 35 U.S.C. 103(a) as unpatentable over Kohlhase et al. in view of Tomiyama et al. (USPN 5,677,083). Claim 6 depends from claim 1, and is therefore directed to a rechargeable cathode for an aqueous electrochemical cell. As discussed above, Kohlhase et al. teach non-aqueous cells. Tomiyama also teaches non-aqueous cells, and does not cure the

deficiencies of Kohlhase et al. The rejection under 35 U.S.C. 103(a) should therefore be withdrawn.

Claims 24 and 25 were rejected under 35 U.S.C. 103(a) as unpatentable over Kordesch et al. in view of Tomiyama. Each of claims 24 and 25 depends from claim 15, and is therefore directed to an air recovery battery with a container having an air access port. Neither Kordesch et al. nor Tomiyama discloses or suggests containers with air access ports, and the rejection under 35 U.S.C. 103(a) may be withdrawn.

Claims 28 and 30 were rejected under 35 U.S.C. 103(a) as unpatentable over Kordesch in view of Hull et al. (USPN 6,265,104 B1). Claims 28 and 30 are directed to a AAA battery and a C battery, respectively.

Kordesch and Hull describe very different types of cells; Kordesch et al. describes flat cells and wound cells, while Hull et al. describes cylindrical cells in which the cathode is a tube that surrounds the anode material. In view of these substantial differences in design, there would have been no motivation to combine the teachings of Kordesch with those of Hull et al. Applicants submit that the office action has not established a *prima facie* case of obviousness, and request that the rejection under 35 U.S.C. 103(a) be withdrawn.

Claims 32 and 34–38 were rejected under 35 U.S.C. 103(a) as unpatentable over Kordesch et al. (USPN 3,945,847) in view of Mishina et al. (USPN 5,800,939). Applicants traverse this rejection.

Claim 32 is directed to an air recovery battery having an air access port, and claims 34–38 are directed to a method of making an air recovery battery with an air access port. The Kordesch et al. patent does not teach or suggest an air access port. Likewise, the Mishina et al. patent does not disclose or suggest an air access port. Consequently, the Mishina et al. patent does not cure the deficiencies of the Kordesch et al. patent.

Applicants therefore submit that the combination of the Kordesch et al. patent with the Mishina et al. patent does not render applicants' invention obvious. The rejection under 35 U.S.C. 103(a) should therefore be withdrawn.

Claims 40 and 41 were rejected under 35 U.S.C. 103(a) as unpatentable over Debe et al. in view of Buchta (USPN 4,582,553). Claims 40 and 41 depend from claim 39, which recites the step of combining components "at a temperature below about 10°C..." As is discussed above,

Debe et al. does not teach or suggest mixing ingredients at a temperature below about 10°C. Buchta, as the examiner notes, teaches mixing "at an elevated temperature (30° to 50° C.)." Buchta therefore does not cure the deficiencies of Debe et al. Applicants submit that claims 40 and 41 are not rendered unpatentable by the combination of Debe et al. and Buchta, and request that the rejection under 35 U.S.C. 103(a) be withdrawn.

Applicants ask that all claims be allowed. Filed herewith is a petition for extension of time, along with a check for the required fee. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the claims:

Claim 1 has been amended as follows:

1. (Amended) A rechargeable cathode for an aqueous electrochemical cell, the cathode comprising a cathode paste containing at least about 60% by weight MnO_2 and at least about 2% by weight of a hydrophobic polymer, wherein the MnO_2 consists essentially of electrochemically synthesized MnO_2.